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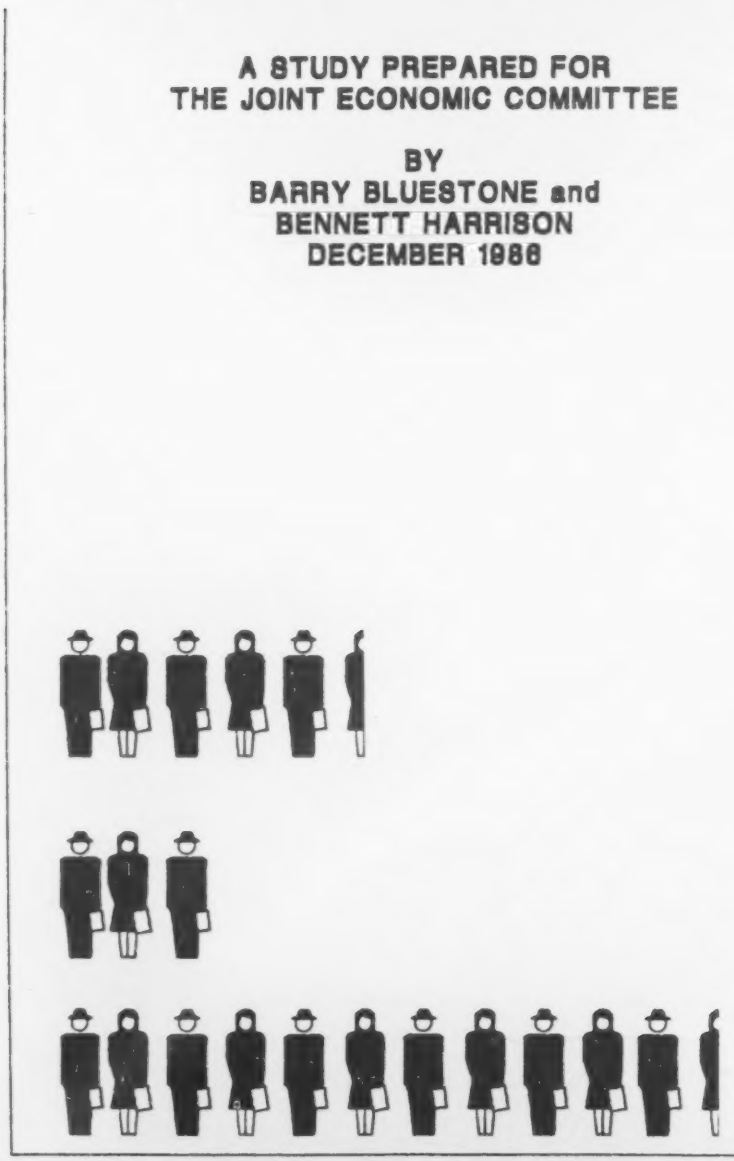
THE GREAT AMERICAN JOB MACHINE:

THE PROLIFERATION OF LOW WAGE EMPLOYMENT IN THE U.S. ECONOMY

A STUDY PREPARED FOR
THE JOINT ECONOMIC COMMITTEE

BY
BARRY BLUESTONE and
BENNETT HARRISON
DECEMBER 1986



* ESTIMATED WAGE LEVEL BELOW WHICH 100% OF NET NEW JOBS WERE CREATED

NET INCREASE IN NEW JOBS (1979-1984)
BY ANNUAL WAGE GROUPING
EACH FIGURE REPRESENTS 400,000 NEW JOBS

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THE GREAT AMERICAN JOBS MACHINE:
The Proliferation of Low-wage Employment in the U.S. Economy

Barry Bluestone
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For more than a decade the United States has been in the enviable position of producing more new jobs than most of the rest of the industrialized nations combined. Indeed, Europe had virtually zero employment growth between 1973 and 1984, while the U.S. added nearly twenty million new jobs during the same period.[1]

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As a result, America has been justifiably termed "The Great Jobs Machine." While unemployment rates are clearly much higher than in previous decades, the economy has generated employment opportunity for millions in the "baby boom" generation and for an unprecedented number of women who have entered and remained in the labor force. Leaders of the Common Market and the Organization for Economic Cooperation and Development (OECD) have been so impressed by U.S. employment gains that they have sent delegations across the Atlantic to learn what they can from this apparent success.

Those charged with responsibility for current economic policy have been particularly pleased with recent employment gains. Since 1981, the total number of jobs in the U.S. has expanded by nearly 10 million, despite the severe 1981-82 recession, and the grand total has grown nearly every month since the end of 1982.[2] The tax cuts initiated under the Reagan Administration and the expansion in the nation's money supply beginning in 1983 have indeed brought about a substantial economic recovery.

Yet for all of the jubilation surrounding this accomplishment, the recent employment record is not quite as good as the raw numbers seem to suggest. For one thing, the civilian labor force -- the number of Americans who are working or who <u>want</u> to work -- grew at an even faster pace than the rate of job growth. This has left the overall unemployment rate essentially unchanged while the absolute number of unem-

ployed workers has increased by nearly one-half million. Moreover, the recent record of accomplishment is actually weaker than that of the period that immediately preceded it. In the four years 1976 to 1980, total employment rose by nearly 7.3 million, or 1.8 million net new jobs per year. Job creation since 1981 has been proceeding at a rate that provides 200,000 fewer new jobs a year. The slowdown in the annual rate of new job development has contributed to the much higher average unemployment of the 1980s. Indeed, if the earlier annual rate had been maintained into the mid-1980s, more than one million additional persons would be at work today and the civilian unemployment rate would be 6.3 percent, if not lower.[3]

What is most important, however, is that none of the aggregate numbers reveal anything about the types of jobs created during this period, or how much they pay. As for the first question, the record reveals a continuation into the 1980s of a strong trend toward employment growth in the service sector, with literally no expansion whatsoever in employment in goods production. In fact, since 1981, the number of people employed in construction and manufacturing has declined by more than 500,000, while private sector service employment (including transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and business and personal services) has been responsible for all of the total net growth in the number of civilian jobs. Clearly, the radical sectoral restructuring of the American economy continues apace.[4]

How this shift in the sectoral composition of employment affects the distribution of real wages and salaries--our second question--is obviously important if one is concerned with the quality as well as the quantity of job creation in the U.S. Both the level and distribution of wages are likely to be affected by these sectoral shifts, and (perhaps even more strongly) by changes in the distribution of jobs within each sector. The redesign of full-time into part-time jobs, the disproportionate growth of part-time or part-year work, and the spread of wage freezes and concessions from one industry to another all suggest a real decline in annual earnings. In addition, demographic factors -- including the continued rise in female labor force participation and the entry of the baby boom generation into the workforce -- could also be affecting the wage distribution.

Our objective in this paper is not so grand as to statistically parcel out the impact of each of these diverse factors, but rather more modestly to provide some summary measures of the trends in the distribution of real labor income to which the various factors are contributing.[5] Within that general framework, the particular issue we wish to address in the present paper is straightforward: underneath the appearance of substantial overall job creation since 1973, is America proliferating low-wage jobs and perhaps even shifting toward an increasingly polarized labor market structure?[6,7]

To answer these more specific questions, we investigate changes in the level and distribution of real annual wages and

salaries earned by workers during the period over which the Great American Jobs Machine was apparently so productive -- 1973 through 1984. Using Current Population Survey (CPS) data from the U.S. Census, we tabulate the net new employment generated over this period according to whether the additional workers earned "high", "middle", or "low" real annual wages. These wage distributions are then recalculated by industrial sector, region, age, race, gender, education, and on the basis of whether the workers in question were employed full-time and year-round. Finally, we compare changes in the proportions of workers falling into these three earnings categories between two subperiods: 1973-1979 and 1979-1984. The comparison allows us to ascertain just how "good" the most recent job gains have been, at least in terms of income generation.

What do these statistics reveal?

- Compared to the first subperiod (1973-1979), the net new employment created between 1979 and 1984 has occurred disproportionately at the low extreme of the wage and salary distribution (i.e. below $7,000 in 1984 dollars). Specifically, during the 1970s about one out of every five net additional wage-earners found a job (or jobs) paying as little as $7,000. Since 1979, that fraction has risen to nearly six in ten.

- During the second subperiod (1979-1984), the number or workers with earnings as high or higher than the 1973 median ($14,024 in 1984 dollars) actually declined by 1.8 million, while workers with earnings less than the 1973 real median increased by some 9.9 million. (See Appendix B). While there have been some high-wage jobs created during this period, on a net basis, all of the employment increase experienced since 1979 has been generated by the creation of jobs which paid less than the median wage in 1973. Thus while the "middle wage" earnings category shows some growth during this subperiod, this growth was concentrated at the bottom end of the category (between 50% and 100% of the 1973 median).

- Of the major demographic groups in the U.S., white men have been the biggest losers, suggesting the increasingly universal impact of these changes in the wage structure. No longer are the "working poor" restricted to women and those who are members of minority groups. Between 1973 and 1979, fewer than one out of every four new jobs taken by white men fell into the low wage category. Since 1979, however, nearly 97 percent of net employment gains among white men have been in the low wage stratum. During the same period, white men have experienced a net loss of one million jobs paying $28,000 or more in 1984 dollars.

- Between the 1970s and the 1980s, white women continued to show small gains in their access to higher wage jobs, but unlike the case in the earlier period, the proportion of such workers in low wage employment also increased. Thus employment for white women has shown a slight tendency toward polarization -- a growth in the low and high wage extremes of the distribution at the expense of the middle.

- Employment for both minority men and minority women shows a renewed trend toward low wages. Notable in this regard is the apparent reversal of the trend toward higher wage job opportunities for black men which was observed during much of the 1970s.

- The disproportionate expansion of the low-wage sector is found to be especially prevalent among younger workers (age 16-34). However, it is not restricted to them; it is also evident among older workers, those 35 years of age and older. Hence, the shift toward low-wage employment cannot be dismissed simply as a consequence of baby-boomers entering the workforce in the 1970s.

- The trend toward low-wage employment is found in all regions of the country, but it is substantially more pronounced in the Midwest. In the hard-hit industrial and agricultural Midwestern states, middle- and high-wage employment declined between 1979 and 1984 by more than a million jobs, while the number of low-wage jobs increased by more than 900,000. In no other part of the country have the income ef-

fects of deindustrialization -- enormous downward wage mobility -- been so pronounced.

- The tendency toward low wages holds for year-round, full-time workers as well as for those who do not work as often during the year. This implies that it is not merely the increase in part-time work that is responsible for low annual wages. The underlying distribution of hourly or weekly wage rates appears to be shifting toward the low-wage extreme as well, although we do not measure weeks or hours directly in this paper.[8]

- In sum, the economic restructuring of the 1980s -- including the loss of jobs in the manufacturing sector, the continued growth of the service economy, and the reorganization of work toward more part-time schedules -- has left in its wake a proliferation of low-wage jobs. If this pattern of development continues, the standard of living of a growing proportion of the American workforce will be significantly jeopardized.

Measuring the Distribution of Real Wages

In studying developments in labor market compensation, researchers generally focus either on changes in the average level of real wages from one period to the next or on the changing distribution of nominal wages around some standard such as the median in each period. The first of these measures is useful as a rough indicator of the buying power associated with the average weekly or hourly wage paid in the economy. The second provides a measure of how equally or unequally wages are distributed in each period, independent of real buying power. As such, the two measures serve very different functions.

To meet our purpose of investigating the distribution of real wages over time, we find it desirable to combine the attributes of these two measures into a single indicator. The new measure can then be used to directly ascertain how many workers in each period can afford a given living standard based on the wages they receive. With respect to such a standard, it becomes possible to measure not only the average wage over time after adjusting for inflation, but also to keep track of how many workers fall into into any particular segment of the earnings distribution, e.g. the "low", "middle" or "high" end of the wage spectrum.

The wage standard that we have developed for use in this research is straightforward in its construction. We chose as the basic standard the 1973 nominal median annual wage and salary income for all workers aged 16 and over.[9] This was the year in which the median annual real wage reached its post-World War II peak of $6,000 (calculated in 1973 terms).[10] The low-wage cutoff for 1973 was then set, somewhat arbitrarily, at half (50%) of this median. Similarly, a high wage cutoff was set at double (200%) the median. This provided the "low", "middle", and "high" wage strata for 1973.

Median standards for later years were then developed by adjusting the nominal 1973 median wage of $6,000 for subsequent price inflation, using the all commodities consumer price index (CPI). Each of these inflation adjusted medians was then multiplied by 50% and 200% to obtain low and high wage standards for the later years. For this paper, we have prepared statistics for 1979 and 1984 for comparison with 1973. These years constitute the peaks of their respective business cycles, in terms of GNP growth. This procedure yields the standards listed in Table 1.

Table 1

Wage Stratification Standards
1973, 1979, and 1984
(Current Dollars)

	LOW CUTOFF	HIGH CUTOFF
1973	$3,000	$12,000
1979	4,900	19,600
1984	7,012	28,048

Source: Calculations from Uniform CPS (Mare-Winship) data files.

Thus, for example, in 1984 a nominal annual wage of approximately $7,000 or less placed a worker in the low wage stratum. Such a worker would have a real wage no greater than a person earning $3,000 or less in 1973, or $4,900 in 1979. Conversely, to fall into the high wage stratum, workers needed to earn $28,000 or more in 1984 -- which would place them at a wage equivalent in real terms to $12,000 in 1973 or $19,600 in 1979.

Calculating Net New Job Growth by Wage Stratum

In deriving estimates of low-, middle-, and high-wage employment, we are not only interested in the total number of such jobs existing in a given year, but wish to estimate what proportions of net new employment generated over any given pe-

riod of time fall into these wage strata. To calculate such numbers, we have relied on the following method:

- First, the number of workers falling into each wage stratum was calculated for 1973, 1979, and 1984, as well as the employment totals for each year.

- Second, for each pair of years, we computed the net change in the number of workers in each stratum. This is the closest it is possible to come with CPS data to estimating net job "creation" by wage level.

- Third, the change in employment in each stratum was divided by the total change in net employment between pairs of years.

Suppose, for example, that the numbers of low, middle, and high wage employees in each of three years were as follows:

				Change		Percentage Shares	
	t_1	t_2	t_3	t_{2-1}	t_{3-2}	t_{2-1}	t_{3-2}
low-wage	5	8	12	3	4	42.9%	80.0%
middle-wage	10	12	13	2	1	28.6	20.0
high-wage	5	7	7	2	0	28.6	0.0
total	20	27	32	7	5	100%	100%

In this example, the low-wage segment grew between t_1 and t_2 by (8-5=) 3 out of a total employment increment of (27-20=) 7. Thus 3/7 (42.9 percent) of the net new employment was low-wage. During the subsequent period t_2 to t_3, employment at low wages grew by (12-8=) 4, out of a total net employment increment of

(32-27=) 5, so that 80 percent of the new employment opportunities were low-wage. Comparing the changes from the first period to the second, we see that the incidence of new low-wage employment clearly increased--indeed, it almost doubled in this example. Moreover, the shift in the structure of employment opportunities by wage level occurred at the expense of the "middle"--whose incremental share fell from (12-10)/(27-20) or 28.6 percent to (13-12)/(32-27) or 20 percent--and (in this example) at the expense of the top, as well.

Some Methodological Considerations

The Data Set - The ideal data set for this study would include information on the jobs and wages actually offered by employers. Unfortunately, the only source of such data is the unemployment insurance records collected by the state employment service agencies for the U.S. Department of Labor (the DOL's ES-202 reports). These are highly confidential and generally unavailable to outside researchers for all but the most limited sorts of officially authorized inquiries. And in any case, the ES-202 data tell us nothing about the demographic characteristics of workers, i.e. what types of people are receiving which levels of wages. For both reasons, it was necessary for us to turn elsewhere to find an appropriate data base.

Like so many other researchers, we finally chose to use the most standard source of employment and wage data, the U.S. Census Bureau's March Current Population Survey. Fortunately, we had access to a special CPS data set known as the March CPS Uniform File, which provides generally consistent variable codes for each of the annual March cross-sections going back to March 1964. This data set makes it possible to use the same computer programs to access comparable data from any of the 1964-85 CPS data sets. Created under the direction of Professors Robert D. Mare of the University of Wisconsin and Christopher Winship of Northwestern University, the uniform file is also easier to access than the standard CPS because it eliminates the hierarchical (household-family-individual) data structure used on the government-supplied tapes. This is particularly helpful for studies involving individuals rather than households or families. Since the early 1970s, each year of the data series includes information on anywhere from 130,000 to 161,000 randomly selected individuals.

For each of these individuals, we have selected basic demographic information (age, race, sex, and education), information about industry attachment and region of residence, and finally data on annual wages and salaries earned during the year previous to the March survey. We have also kept track of each employee's work experience, i.e. whether or not they worked year-round full-time. Any individual aged 16 and over with non-zero wage and salary income in a given year is included in our sample.[11]

Time Period of Analysis - Popular interest in the seemingly remarkable job-generating capacity of the U.S. economy dates from roughly 1973, so that is where we have chosen to begin this study. In order to see whether the incidence of very low and very high wage net employment growth has changed since 1973, we divided the period into two sub-periods. We chose 1973-79 and 1979-84 (the most recent year of data available to us at the time of writing).

Why did we choose these particular dates? Both 1973 and 1979 represent cyclical lows in annual unemployment rates, while 1984 represents the lowest unemployment rate year available in the CPS files since 1979. We performed sensitivity analyses to test for stability in our wage distribution results. For example, we found that, in general, substituting 1973-1978 for 1973-1979 and 1978-1984 for 1979-1984 made little difference in the empirical estimates of the densities of the low and high wage strata of the wage distribution. However, as expected, using data for years at very different points in the business cycle provided results that were seriously distorted, presumably by large cyclical changes in hours worked per year.[12] In contrast, what we are after in this exercise are secular trends.

Alternative Wage Standards - The wage standard used in this research is subject to at least two possible criticisms.

One is that the all commodities CPI may not be the correct measure to use as the inflation factor. While virtually all labor economists have historically used the CPI to adjust wages for inflation, the U.S. Bureau of Economic Analysis (BEA), which is responsible for the official National Income and Product Accounts, adjusts its individual income series by the implicit price deflator for personal consumption expenditures (PCE). The PCE deflator rose by 6.6% per year from 1970-1984, slightly slower than the 7.0% annual growth of the CPI.[13] Consequently, using the PCE as the deflator yields a somewhat lower wage cutoff for both the low and high wage strata in later years and could therefore affect the findings.

The second possible criticism concerns the 50% and 200% cutoffs used to denote the low and high wage boundaries. These are, of course, arbitrary and the precise cutoff levels might affect the qualitative results.

To test for the sensitivity of our results to these two factors, we recomputed all of our estimates using the PCE as a substitute for the CPI deflator in deriving the low and high-wage standards. We also tried various wage cutoffs including 75% of the median to denote the low wage stratum and 300% of the median for the high wage boundary. None of these variations materially affected the overall results.

The Findings

The empirical results are presented in a series of tables and figures.[14] The first set covers the entire civilian labor force. In subsequent tables, we look at the distribution of wages and salaries within gender and race groups, by education level, by age, by industrial sector and by region. Results are also presented for the especially important group of full-time, year-round workers. In each case, we focus on the distribution of annual wage and salary income at the margin: that is, the distribution of labor income associated with the increment of "jobs created" between pairs of years.

All Workers. In 1973, as Table 2 indicates, there were 93.2 million persons who were employed sometime during the year. Nearly 30 million of them (29.6 million) earned $7,000 or less for their effort, while 15.4 million earned $28,000 or more (in 1984 dollar terms). By our definition, then, 31.8 percent of the workforce was low-wage while 16.6 percent were located at the high end of the distribution. By 1979, the total workforce had increased by 12.1 million to 105.3 million. Of this increase, only 2.4 million or 19.9 percent of the net new persons employed received annual wages and salaries that placed them within the lowest stratum. This was sufficient to reduce the overall proportion of low-wage workers to 30.4 percent. Almost two-thirds (64.2%) of the net new employment was found in jobs that paid between $7,000 and $28,000.

Table 2

EMPLOYMENT LEVELS AND EMPLOYMENT SHARES
ALL U.S. WORKERS (000's)

	NUMBER OF EMPLOYEES			EARNINGS SHARES			SHARES OF NET NEW EMPLOYMENT	
	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	29648	32063	36750	31.8%	30.4%	32.4%	19.9%	58.0%
MIDDLE STRATUM	48107	55908	59745	51.6	53.1	52.7	64.2	47.5
HIGH STRATUM	15441	17374	16932	16.6	16.5	14.9	15.9	-5.5
TOTAL	93196	105345	113427	100%	100%	100%	100%	100%

Source: Calculations from Uniform CPS (Mare-Winship) Data Files.

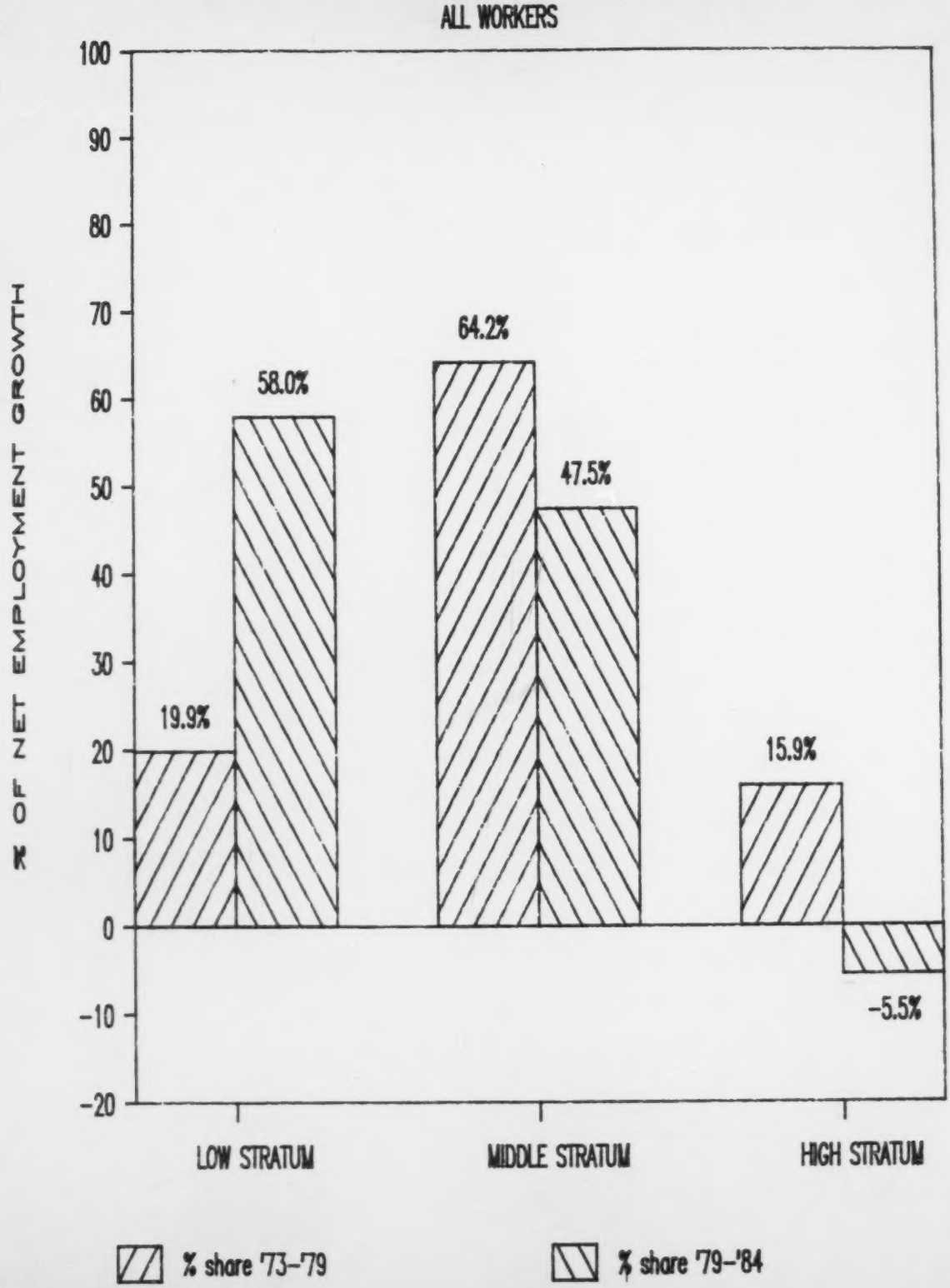
By 1984 total employment had increased to more than 113 million or 8 million more than in 1979. But of these 8 million net new employees, 58 percent earned no more than $7,012 -- the nominal dollar value that kept them in the low-wage stratum. Hence, nearly three fifths of the net new employment generated between 1979 and 1984 was low wage, compared with less than one fifth during the preceding period.

During the same period, the number of high stratum positions actually declined by 5.5 percent -- a loss of more than 440,000 high wage employees. Comparing the wage stratum shares in 1984 and 1979 suggests that the entire real earnings struc-

ture slid downward during this five year period. The middle and high stratum shares declined, while the low-wage share grew significantly. Figure 1 graphically depicts this trend.

FIGURE 1

PERCENT SHARES OF NEW JOB GROWTH



Using different wage standards produces qualitatively similar results. Substituting the PCE for the CPI deflator reduces the size of the increase in the low wage share, but the share of net new low-wage employment still rises between the early and later period from 15 to 37 percent; the proportion of net new employment that pays high stratum wages declines from 29 percent to 11.

Similarly, relying on the 75% and 300% wage boundaries produces essentially the same conclusion. Between 1973 and 1979, approximately half (48.7%) of all net new employment paid annual wages no greater than 75 percent of the inflation adjusted median that prevailed in 1973. In the subsequent period, nearly three-fourths (73%) of all net new employment paid wages this low.

One should not conclude from these results that there was no high wage employment generated whatsoever after 1979. New high wage jobs were created, but some existing ones disappeared altogether. Other previously high wage jobs failed to keep up with inflation and therefore fell from one stratum to another. Consequently, there was a net loss in employment that could maintain buying power consistent with the high wage standard. As for the low end of the economy, a substantial proliferation of new low-wage jobs plus a slippage in the real value of wages in the middle stratum contributed to an absolute as well as a relative swelling of the low-wage sector.[15]

Readily available BLS data have consistently shown a sharp reduction in both average real weekly earnings and average

hourly wages in the economy. Mean earnings peaked at $340 a week in 1973 (in 1984 dollars). By 1985, they had fallen to $291. Real hourly wages have declined by only a slightly smaller percentage, from $9.21 to $8.28.[16]

The results presented here are not only consistent with this trend in the average, but indicate where in the distribution the erosion is occurring. In this case, the drop in average earnings is found to be due to both a proliferation of low-wage jobs and a slippage in the high wage sector. This is not to deny an expansion in the ranks of highly paid white collar professional and technical workers, but it suggests that losses in other highly paid segments of the economy more than offset this growth at the top of the distribution, while low-wage jobs proliferated everywhere else.

By Race and Gender. Has the tendency toward low wages been manifest for all demographic groups? The answer is essentially "yes", but there are some significant variations on this theme, as demonstrated in Table 3. Note particularly the striking results for white men. In the 1973-1979 period, nearly 77 percent of their net new employment fell in the middle and upper strata. But in the subsequent period, there was an astonishing collapse of high wage employment and virtually all of the net job growth occurred in the low-wage sector. Only 3 percent of the two million net additional white male earners

were found in employment outside the low stratum -- in employment that paid more than $7,000 in 1984! It would be difficult to imagine a clearer indication of the tendency toward the proliferation of low wage work.

Table 3

EMPLOYMENT LEVELS AND EMPLOYMENT SHARES BY GENDER AND RACE (000's)

	NUMBER OF EMPLOYEES			EARNINGS SHARES			SHARES OF NET NEW EMPLOYMENT	
WHITE MEN	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	9466	10244	12195	19.6%	19.8%	22.7%	23.4%	96.7%
MIDDLE STRATUM	25034	26372	27503	51.8	51.1	51.3	40.3	56.
HIGH STRATUM	13805	15008	13944	28.6	29.1	26.0	36.2	-52.7
TOTAL	48305	51624	53642	100%	100%	100%	100%	100%
WHITE WOMEN	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	16073	17478	19125	47.3%	42.5%	42.7%	19.8%	44.4%
MIDDLE STRATUM	16997	22332	23887	50.0	54.4	53.3	75.1	41.9
HIGH STRATUM	911	1273	1783	2.7	3.1	4.0	5.1	13.7
TOTAL	33981	41083	44795	100%	100%	100%	100%	100%
NON-WHITE MEN	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	1574	1756	2367	26.7%	27.0%	31.7%	29.1%	64.5%
MIDDLE STRATUM	3691	3874	4150	62.7	59.5	55.6	29.2	29.1
HIGH STRATUM	622	883	944	10.6	13.6	12.7	41.7	6.4
TOTAL	5887	6513	7461	100%	100%	100%	100%	100%
NON-WHITE WOMEN	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	2535	2586	3064	50.5%	42.2%	40.7%	4.6%	34.1%
MIDDLE STRATUM	2383	3330	4204	47.5	54.4	55.8	85.8	62.3
HIGH STRATUM	104	210	261	2.1	3.4	3.5	9.6	3.6
TOTAL	5022	6126	7529	100%	100%	100%	100%	100%

Source: Calculations from Uniform CPS (Mare-Winship) Data Files.

The same story is true for non-white men. The proportion of net new employment in the low wage stratum more than doubled (from 29 to 65%) between the earlier and later periods. As a result, the share of low-wage employment among all non-white men increased from 27 percent in 1979 to nearly 32 percent four years later. It is worth noting that the data in Table 3 also indicate that one trend in non-white male employment seems to have nearly ceased in the 1980s: the growth in well-paid black employment. Between 1973 and 1979, nearly 42 percent of net new employment among non-white men was in the high wage stratum; since 1979 the proportion has slipped to only 6.4 percent.

One of the interesting variations on the low-wage theme is found in the case of white women. As is true of their male counterparts, the proportion of net new employment that falls into the bottom stratum has increased since 1979. However, there has also been a noticeable increase in the high wage stratum, thus producing a degree of polarization in the distribution. Note that 75 percent of net new employment generated between 1973 and 1979 paid middle-level wages. However, in the subsequent period, less than 42 percent of the net job growth has fallen into this range. Both the bottom and top shares of new employment have more than doubled. The trend toward better

job opportunity for women appears to be confirmed by these results, but it is a trend restricted to a relatively small number of women. Even by 1984, only 4 percent of all working women were earning $28,000 or more on an annual basis. This compares with 26 percent among white men.

Since 1973, non-white women have seen significant improvements in their job opportunities as well, but the pace of improvement has slowed down markedly since 1979. This is true at both ends of the distribution. In 1973 more than half of all non-white women earned wages at or below the low-wage standard. The proportion has dropped to slightly more than two-fifths. However, of the total 9.8 percentage point decline, all but 1.5 percentage points occurred before the 1979-1984 period. Virtually all of the improvement in the high end of the spectrum also occurred prior to the 1980s.

Hence, for both whites and non-whites, for women as well as men, the most recent period of employment expansion has failed to produce anywhere near as much real wage improvement as in the past. Ironically, white men -- those who traditionally have had the greatest advantage in the labor market -- have been the ones who have faced the most severe erosion in their job opportunities. Thus, the ratios of low-wage employment among demographic groups continue to close, but the improvement in these ratios owes more to the fact that white men are suffering great losses than that other groups are making great gains.[17]

By Age. One possibility, of course, is that the low-wage trend is due entirely to the entrance of the baby boom generation into the labor force in the 1970s. One might be led to postulate such an explanation both by ordinary supply and demand theory (in this case, excess supplies of young, inexperienced labor) and by institutional theory which recognizes that young workers usually enter the market at the bottom of seniority ladders.[18]

To test this hypothesis, we divided the full sample into two groups: those below age 35 and all those 35 and above. About a third of the net new persons employed between 1979 and 1984 were in the baby boom cohort. How did they fare relative to their elders? The answer, found in Table 4 and Figures 2a and 2b, is that both groups have experienced a proliferation in low-wage employment. To be sure, the low-wage trend is much more severe among younger workers, but even among those 35 and older, more than a third of net new employment after 1979 paid $7,000 or less (in 1984 dollars). Only 5.3 percent of the net new employment of this group paid $28,000 or more.

Table 4

EMPLOYMENT LEVELS AND EMPLOYMENT SHARES BY AGE, GENDER AND RACE (000's)

	NUMBER OF EMPLOYEES			EARNINGS SHARES			SHARES OF NET NEW EMPLOYMENT	
AGE LESS THAN 35	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	19487	21371	24111	41.7%	38.4%	41.4%	21.1%	107.0%
MIDDLE STRATUM	23056	29385	29939	49.3	52.8	51.4	71.0	21.6
HIGH STRATUM	4236	4931	4198	9.1	8.9	7.2	7.8	-28.6
TOTAL	46779	55687	58248	100%	100%	100%	100%	100%
AGE 35 OR MORE	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	10161	10692	12640	21.9%	21.5%	22.9%	16.4%	35.3%
MIDDLE STRATUM	25050	26524	29807	54.0	53.4	54.0	45.5	59.5
HIGH STRATUM	11206	12443	12733	24.1	25.1	23.1	38.2	5.3
TOTAL	46417	49659	55180	100%	100%	100%	100%	100%
MEN LESS THAN 35	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	8229	8937	10820	30.9%	29.7%	34.9%	20.7%	199.0%
MIDDLE STRATUM	14401	16659	16568	54.1	55.4	53.5	65.9	-9.6
HIGH STRATUM	3990	4452	3606	15.0	14.8	11.6	13.5	-89.4
TOTAL	26620	30048	30994	100%	100%	100%	100%	100%
MEN AGE 35 +	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	2811	3062	3741	10.2%	10.9%	12.4%	48.6%	33.6%
MIDDLE STRATUM	14325	13588	15087	52.0	48.4	50.1	-142.8	74.2
HIGH STRATUM	10437	11439	11282	37.9	40.7	37.5	194.2	-7.8
TOTAL	27573	28089	30110	100%	100%	100%	100%	100%

TABLE 4 (CON'T)

	NUMBER OF EMPLOYEES			EARNINGS SHARES			SHARES OF NET NEW EMPLOYMENT	
WOMEN LESS THAN 35	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	11258	12434	13291	55.8%	48.5%	48.8%	21.5%	53.1%
MIDDLE STRATUM	8656	12726	13371	42.9	49.6	49.1	74.3	39.9
HIGH STRATUM	245	479	592	1.2	1.9	2.2	4.3	7.0
TOTAL	20159	25639	27254	100%	100%	100%	100%	100%
WOMEN AGE 35+	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	7350	7630	8898	39.0%	35.4%	35.5%	10.3%	36.2%
MIDDLE STRATUM	10726	12936	14720	56.9	60.0	58.7	81.1	51.0
HIGH STRATUM	769	1004	1452	4.1	4.7	5.8	8.6	12.8
TOTAL	18845	21570	25070	100%	100%	100%	100%	100%

Source: Calculations from Uniform CPS (Mare-Winship) Data Files.

FIGURE 2A

PERCENT SHARES OF NEW JOB GROWTH

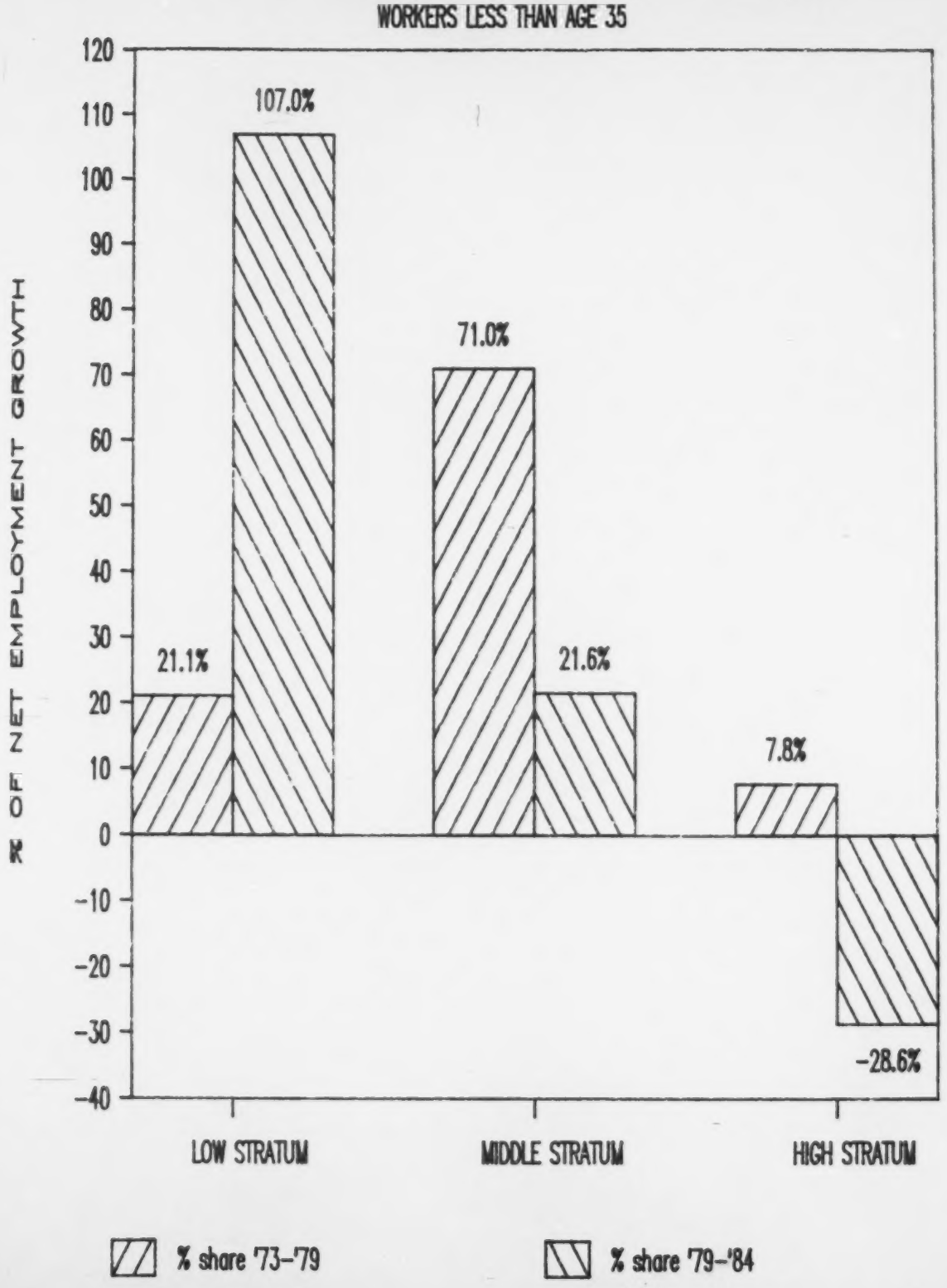
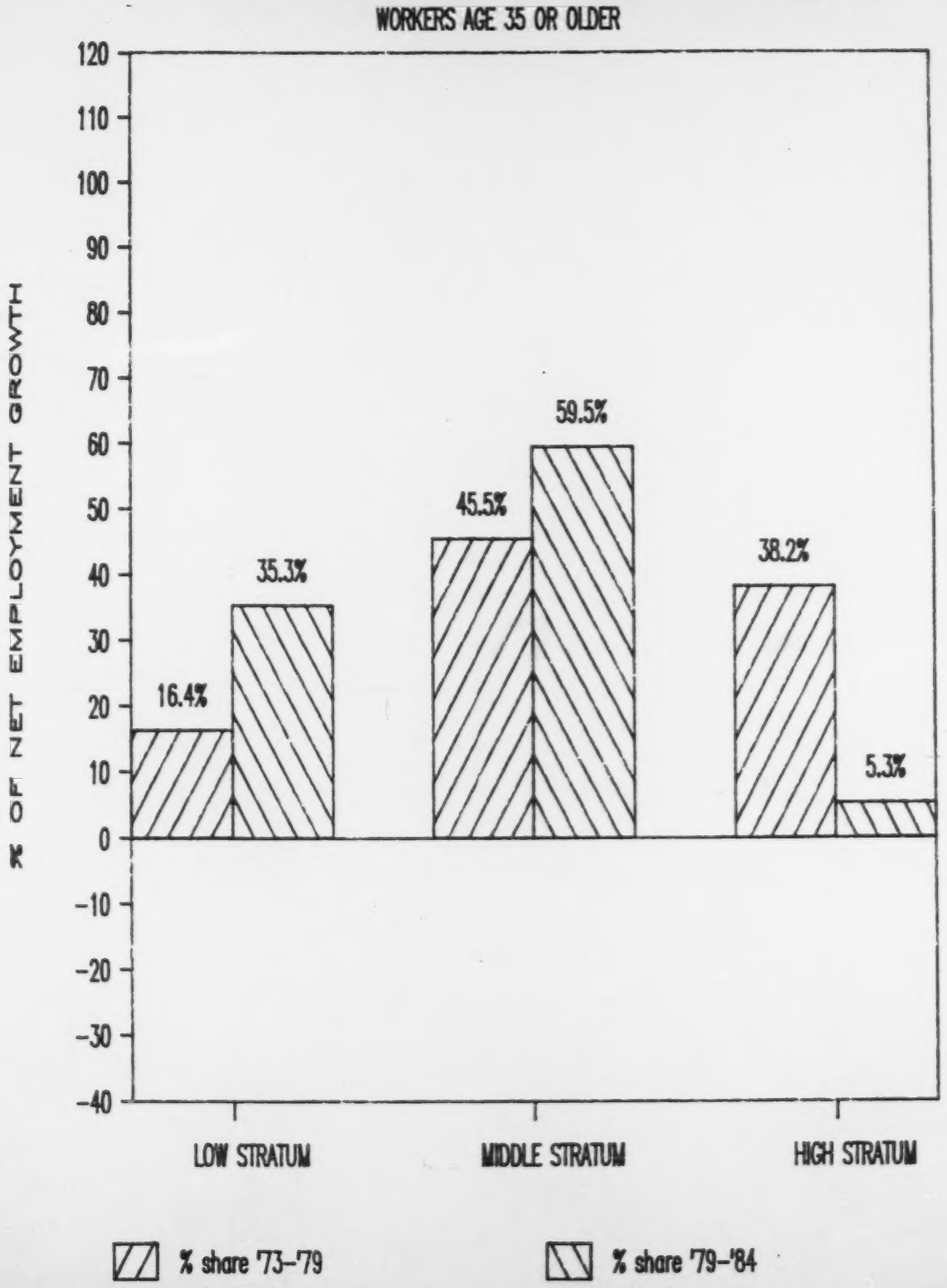


FIGURE 2B

PERCENT SHARES OF NEW JOB GROWTH



This test of the baby boom hypothesis pooled the records of men and women. What happens when we disaggregate the age data along these lines? There is no question that younger men attempting to cope with labor market conditions since 1979 have confronted enormously increased odds of ending up in the lower pole of the earnings distribution relative to those working during the mid-1970s. The number of net new jobs available to men aged 16-34 in the middle and higher strata of the jobs distribution fell absolutely, so that almost 200 percent of the gain in employment was found in the lowest stratum of the distribution. In contrast, the shift in employment opportunity for older men was modest. This finding is consistent with the hypothesis of growing intergenerational inequality, first uncovered by Frank Levy and Richard Michel.[19]

The pattern of polarization observed for women holds true for both those above and below age 35. The only significant difference between the two groups is that younger women, as expected, have a higher probability of low-wage employment and a lower fraction of high-wage jobs, due presumably to their relative lack of job experience.

By Education. Examination of the changes in the distribution of wage income by education reveals a growing disparity between those with and without at least some college experience. The three panels of Table 5 contain our findings.

In sum, the condition of high school dropouts clearly deteriorated between 1973 and 1984; both the middle and the top of the distribution show a strong tendency toward decline with the overall low-wage share rising from 44.3 to 53.6 percent. (Because the absolute number of high school dropouts declined in each year, our methodology does not permit the normal calculation of net new employment shares.)

High school graduates who did not go on to college also experienced an increase in low-wage employment, but not anywhere near as dramatic as for those who failed to complete grade 12. Still, more than 80 percent of the net new employment among high school graduates paid low wages after 1979. In contrast, the distribution for workers with at least some college education shifted far less. Twenty-eight percent of the net new employment held by college-educated workers after 1979 was low-wage, up from 17 percent in the 1970s. One in six of the net new jobs held by collegians in the most recent period paid $28,000 or more, down from an increment of nearly one in five between 1973 and 1979.

Thus, college-educated workers have not been immune to the tendency toward low-wage employment, but compared with the experience of both high school dropouts and high school graduates, their employment opportunities have been much less constrained by post-1979 labor market developments. At least in terms of annual wages, Americans are apparently becoming increasingly divided along the lines of educational attainment,

just as men are becoming increasingly divided in job opportunity across generations.

Table 5

EMPLOYMENT LEVELS AND EMPLOYMENT SHARES BY EDUCATION LEVEL (000's)

	NUMBER OF EMPLOYEES			EARNINGS SHARES			SHARES OF NET NEW EMPLOYMENT	
LESS THAN H.S. DEGREE	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	12923	12196	11737	44.3%	47.7%	53.6%	N.A.	N.A.
MIDDLE STRATUM	13865	11553	9158	47.6	45.2	41.8	N.A.	N.A.
HIGH STRATUM	2363	1820	1001	8.1	7.1	4.6	N.A.	N.A.
TOTAL	29151	25569	21896	100%	100%	100%	N.A.	N.A.
HIGH SCHOOL GRADUATE	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	9896	11328	14177	27.4%	27.0%	31.2%	25.1%	81.2%
MIDDLE STRATUM	21041	24839	26494	58.2	59.3	58.4	66.5	47.2
HIGH STRATUM	5240	5718	4721	14.5	13.7	10.4	8.4%	-28.4
TOTAL	36177	41885	45392	100%	100%	100%	100%	100%
SOME COLLEGE OR MORE	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	6829	8540	10836	24.5%	22.5%	23.5%	17.1%	27.8%
MIDDLE STRATUM	13200	19516	24093	47.4	51.5	52.2	63.0	55.5
HIGH STRATUM	7839	9836	11210	28.1	26.0	24.3	19.9	16.7
TOTAL	27868	37892	46139	100%	100%	100%	100%	100%

Source: Calculations from Uniform CPS (Mare-Winship) Data Files.

By Region. The general trend toward low wage employment is found everywhere in the nation, even in the prosperous Northeast and West census regions (see Table 6 and Appendix A). In the Northeast, site of much of the highly touted high tech R & D and business service expansion since 1979, 91 percent of the net new employment paid annual wages of $7,000 or less in 1984 prices--three times the rate of incremental low-wage job creation of the 1970s. This finding is consistent with earlier reports that the revival of such mature economies as that of New England has been built substantially on the basis of low-wage employment, particularly in services.[20] Even in the relatively prosperous Western region, the average and marginal shares of low-wage employment have turned upward since 1979.

Not unexpectedly, the region with the highest unemployment -- the Midwest -- has faced by far the worst erosion of high wage jobs and the greatest proliferation of low-wage employment. Indeed, none of the more than 8 million net new persons employed nationwide between 1979 and 1984 found work in this part of the country. Those already working in the Midwest saw low wage employment expand by more than 900,000 jobs while the number at work in middle and high wage jobs fell by over a million. As a result, the total share of low-wage employment expanded by 3.3 percentage points (from 30.7% to 34.0%) between 1979 and 1984. As for the South, it experienced net growth in all strata, but low-wage employment expanded the most.

TABLE 6

EMPLOYMENT LEVELS AND EMPLOYMENT SHARES BY REGION (000's)

	NUMBER OF EMPLOYEES			EARNINGS SHARES			SHARES OF NET NEW EMPLOYMENT	
NORTHEAST	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	6205	6765	7214	28.6%	28.7%	30.0%	30.8%	90.9%
MIDDLE STRATUM	11441	12766	12948	52.7	54.2	53.9	73.0	36.8
HIGH STRATUM	4073	4004	3867	18.8	17.0	16.1	-3.8	-27.7
TOTAL	21719	23535	24029	100%	100%	100 %	100%	100%
MIDWEST	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	8309	8732	9641	32.3%	30.7%	34.0%	15.2%	N.A.
MIDDLE STRATUM	12702	14755	14580	49.4	51.8	51.4	74.0	N.A.
HIGH STRATUM	4690	4990	4118	18.2	17.5	14.5	10.8	N.A.
TOTAL	25701	28477	28339	100%	100%	100%	100%	N.A.
SOUTH	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	9894	10455	12697	34.0%	31.6%	33.1%	14.3%	42.4%
MIDDLE STRATUM	15623	18074	20598	53.6	54.7	53.7	62.4	47.7
HIGH STRATUM	3622	4535	5059	12.4	13.7	13.2	23.3	9.9
TOTAL	29139	33064	38354	100%	100%	100%	100%	100%
WEST	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	5241	6111	7199	31.5%	30.1%	31.7%	24.0%	44.7%
MIDDLE STRATUM	8341	10315	11619	50.1	50.9	51.2	54.4	53.6
HIGH STRATUM	3056	3844	3887	18.4	19.0	17.1	21.7	1.8
TOTAL	16638	20270	22705	100%	100%	100%	100%	100%

Source: Calculations from Uniform CPS (Mare-Winship) Data Files.

By Industrial Sector. Wage distributions are well known to vary among industries. We are now learning that important changes are occurring within industrial sectors, as well. Consider the data on manufacturing found in the first panel of Table 7. In the earlier of the two periods under examination (1973-1979), the size of the low wage stratum in manufacturing declined sharply while the high wage sector expanded. But since 1979, this trend has been completely reversed. The number of jobs in the high wage stratum is back to the level of 1973, while all of the gross employment gains have come in the low-wage sector. Manufacturing in the twentieth century has historically had a relatively small low-wage stratum, in no small measure due to continuous productivity increases and a high incidence of unionization. According to these results, the contemporary restructuring of manufacturing does not bode well for the continuation of this equitable wage structure.

Table 7

EMPLOYMENT LEVELS AND EMPLOYMENT SHARES BY INDUSTRY (000's)

	NUMBER OF EMPLOYEES			EARNINGS SHARES			SHARES OF NET NEW EMPLOYMENT	
MANUFACTURING	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	4344	3926	4199	18.8%	16.2%	18.3%	-39.3%	N.A.
MIDDLE STRATUM	13974	14581	13938	60.4	60.2	60.7	57.0	N.A.
HIGH STRATUM	4819	5694	4825	20.8	23.5	21.0	82.2	N.A.
TOTAL	23137	24201	22962	100%	100%	100%	100%	N.A.
"HIGH TECH"	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	313	322	411	15.5%	12.0%	12.1%	1.4%	12.4%
MIDDLE STRATUM	1121	1492	1900	55.5	55.7	55.9	56.4	56.7
HIGH STRATUM	586	864	1087	29.0	32.3	32.0	42.2	31.0
TOTAL	2020	2678	3398	100%	100%	100%	100%	100%
SERVICES	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	20417	22965	26737	41.7%	39.5%	40.7%	27.8%	49.6%
MIDDLE STRATUM	22758	28833	32021	46.5	49.6	48.8	66.3	41.9
HIGH STRATUM	5736	6277	6926	11.7	10.8	10.5	5.9	8.5
TOTAL	48911	58075	65684	100%	100%	100%	100%	100%

Source: Calculations from Uniform CPS (Mare-Winship) Data Files.

We have constructed a particular operational definition of "high technology" industries, in order to examine the much-debated question of how well paid is this growing sector of the economy.[21] The results, presented in the second panel of Table 7, suggest that even high tech has not completely escaped the trend toward low wages. During the 1970s, practically none of the net new employment was low wage in this set of industries. Presumably most of the high tech jobs were taken by skilled engineers and technicians. Yet since 1979, almost one in eight of the net new jobs in this sector was low-wage by our $7,000 standard. High tech continues to display a far more equitable wage distribution than any other sector of the economy (with the possible exception of government), but the incremental tendency toward low-wage employment is evident even here. Moreover, the share of net new jobs paying high wages in high tech has fallen, from 42 percent between 1973 and 1979 to 31 percent since then.

As with high tech, the service sector demonstrates a much more stable distribution of employment over time compared to manufacturing. Of course, the share of low wage jobs is much higher (see the third panel of Table 7). Traditionally, two out of every five jobs in this sector have been low wage, compared with less than one in five in manufacturing. This ratio does not seem to have significantly changed over time, although the number of low-wage service jobs has been creeping up since 1979 with half of all net new employment in services being low-wage.

What has changed is the sheer size of the service sector--its growing weight in the overall U.S. industrial mix. With virtually all of the net growth in employment in the current recovery occurring in services, the aggregate proportion of low wage jobs must necessarily rise. How much the changing industry mix is contributing to overall aggregate earnings depreciation is not readily measurable from the data presented here. However, this is a question we will be exploring in future research.[22]

The Case of Year-Round Full-Time Workers. It is conceivable that the overall trend toward low wage proliferation is simply the result of the growing incidence of part-time or part-year work, and not to either interindustry or intraindustry changes in the structure of hourly or weekly wage rates, at all. The findings displayed in Table 8 and Figure 3 do not lend support to this contention. Here we have subsampled only those workers who were employed 50 or more weeks a year and usually worked 35 hours or more per week. For this group of workers, while there is still the possibility of some variation in annual hours worked, much of the dispersion in annual wages and salaries must (by the definition of being year-round, full-time) be coming from differences in hourly wage rates.

What we find is that the trend toward low wage employment and away from high wage jobs among year-round full-time (YRFT)

workers is almost as strong as for workers in general. In the early period, the number of low wage YRFT jobs actually declined by more than 400,000 while high stratum employment climbed by 1.7 million. But after 1979, the tables turned completely around. Low-wage employment grew by 1.5 million while the number of persons earning high real wages declined. Indeed, more than one out of five YRFT jobs created between 1979 and 1984 paid no more than $7,000 in 1984 dollars.

From our earlier research, we are led to infer -- but as yet cannot definitively conclude -- that the absolute growth in lower wage (but year-round) service jobs is contributing to the expansion of the low wage stratum in the economy, while the decimation of employment in a major portion of the manufacturing sector is responsible for the losses sustained in the high end of the distribution. It will take formal econometric disentangling of variations in industry-specific work experience to finally achieve closure on this subject, another task we are presently pursuing.[23]

Table 8

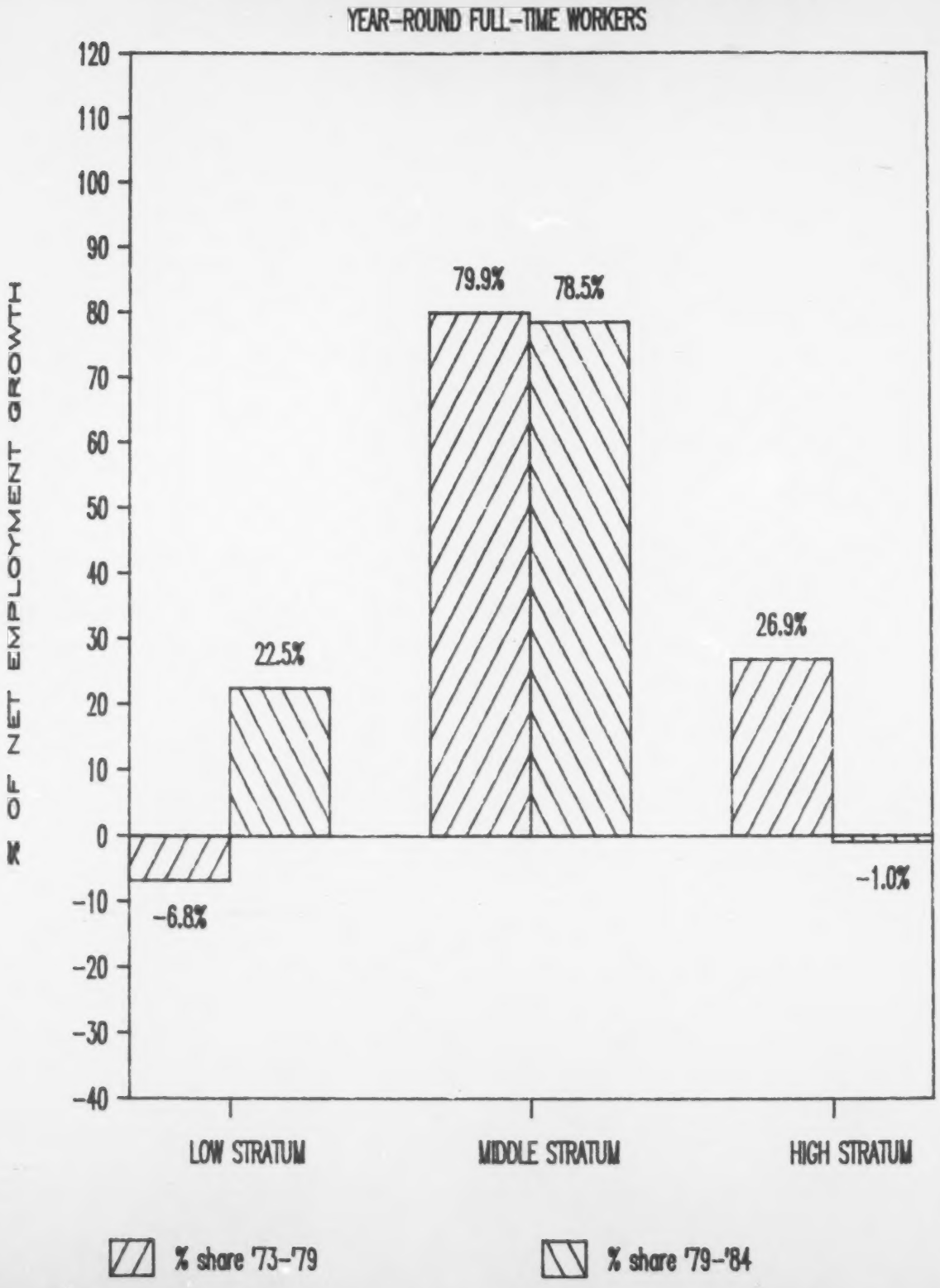
EMPLOYMENT LEVELS AND EMPLOYMENT SHARES
YEAR-ROUND FULL-TIME WORKERS (000's)

	NUMBER OF EMPLOYEES			EARNINGS SHARES			SHARES OF NET NEW EMPLOYMENT	
YEAR-ROUND FULL-TIME	1973	1979	1984	1973	1979	1984	'73-79	'79-84
LOW STRATUM	2842	2411	3920	5.4%	4.1%	6.0%	-6.8%	22.5%
MIDDLE STRATUM	35369	40436	45702	67.5	68.8	69.8	79.9	78.5
HIGH STRATUM	14201	15904	15838	27.1	27.1	24.2	26.9	-1.0
TOTAL	52412	58751	65460	100%	100%	100%	100%	100%

Source: Calculations from Uniform CPS (Mare-Winship) Data Files.

FIGURE 3

PERCENT SHARES OF NEW JOB GROWTH



Conclusion

The continuing decline in high wage manufacturing, combined with the expansion in the low-wage retail trade and service sectors, have led to the popular perception that America may be on the verge of losing its middle class.[24] Writers often equate "middle class" with "recipients of middle-level incomes". In those terms, our results confirm an unmistakable trend in this direction for individual working people.[25]

At the margin, the net additions to employment being generated in the U.S. since the late 1970s have been disproportionately and increasingly concentrated at the low-wage end of the spectrum. That 58 percent of all net new employment between 1979 and 1984 paid annual wages of less than $7,000 clearly supports this conclusion. Indeed, if the ratio of net new low-wage employment to net new total employment for the earlier period (1973-79) had prevailed for the period after 1979, the total number of new low wage positions would have been only 1.6 million, rather than the 4.7 million that we actually experienced. Hence, the strong and apparently enviable record of job creation since 1979 masked the fact that more than 3.1 million of the 8 million net new jobs represented additional low-wage employment over and above the number of low-wage jobs that would have been created under earlier conditions. That there was an absolute decline of more than 450,000

jobs paying high wages confirms the recent shift toward low-wage work.

Of all the demographic groups in the U.S., younger white men have been the biggest losers in the sense that all of the net new jobs held by this group after 1979 paid very low wages. In contrast, the share of all new jobs held by white women which pay high wages grew between 1973-79 and 1979-84, while the incidence of very low-paying work increased only slightly. The earnings of workers of color of both genders have not continued to improve as in the earlier period. Notable in this regard is the apparent halt in the previous trend toward a growing high wage share for non-white men. In the period 1973-1979, 42 percent of the net employment growth among minority men was in the high wage end of the distribution. In the years since 1979, that proportion has dropped to 6.4 percent.

The tendency toward the expansion of the low-wage end of the earnings distribution appears to be concentrated especially in the Midwest, but no region of the country is completely immune from it. Finally, the tendency toward low wages is particularly pronounced within the manufacturing sector (which started the period with the smallest low-wage stratum), but it appears even in high tech and in the broadly defined service sector.

A growing volume of research by Danziger and Gottschalk, Thurow, Bell and Freeman, Levy and Michel, and others all points in the same general direction -- a tendency

toward low wages in particular and growing income inequality in general in the United States. It would seem that a serious political debate over how this unsettling development might be reversed should be on the agenda of the next Congress.

ENDNOTES

[1] The European statistics are based on Joyanna Moy, "Recent Trends in Unemployment and the Labor Force, 10 Countries," Monthly Labor Review, Vol. 108, No. 8, August 1985, p. 11; and "The OECD Member Countries - 1986 Edition," The OECD Observer, No. 139, March 1986. The European countries referred to here include France, West Germany, the United Kingdom, Italy, the Netherlands, and Sweden. The United States statistics are from the Economic Report of the President - 1986 (Washington D.C.: Government Printing Office, 1986) and "Economic Indicators," (Washington D.C.: Government Printing Office, 1986), June 1986. If 30 million actual new jobs are created over some period of time, while 10 million are eliminated due to plant closings, partial layoffs, bankruptcies, etc, the net change is 20 million. The 30 and 10 million figures are called "gross" job changes; the "net" job change is the simple arithmetic difference between the two. In this paper, we investigate net changes in employment.

[2] Council of Economic Advisors, Economic Indicators (Washington, D.C.:Government Printing Office, September 1986, p. 11.

[3] This conservative estimate of the unemployment rate under the more rapid job growth scenario assumes that one-half of the additional jobs would go to presently unemployed workers, with the other half going to growth-induced additional labor force participants. In August 1986, this would have led to a decline in total civilian unemployment from 8.027 to 7.477 million and a rise in the civilian labor force from 118.182 to 118.732 million. The base data are from Economic Indicators (Washington, D.C.: Government Printing Office, September 1986).

[4] Barry Bluestone and Bennett Harrison, The Deindustrialization of America (New York: Basic Books, 1982); Bluestone, Harrison, and Alan Clayton-Matthews, "Structure vs. Cycle in U.S. Manufacturing Job Growth", Industrial Relations 25, no. 2 (Spring 1986), pp. 101-117.

[5] For a series of such decompositions, see Chris Tilly, Bennett Harrison, and Barry Bluestone, "Increasing Inequality in the Income From Work in the U.S.: Industry Mix, Work Experience, or Wage Rates?", paper to be presented to the Annual

Meetings of the Industrial Relations Research Association, New Orleans, December 1986.

[6] For those interested in the broader question of how the aggregate distribution of earnings has changed over time, see Bennett Harrison, Barry Bluestone, and Chris Tilly, "The Great U-Turn: Increasing Inequality in Wage and Salary Income in the U.S.", U.S. Congressional Joint Economic Committee, Washington, D.C., January 1986; and "Wage Inequality Takes a Great U-Turn", Challenge, March/April 1986; reprinted in David Obey and Paul Sarbanes, eds., The Changing American Economy (New York: Basil Blackwell, 1986). For broadly similar findings on the existence of a long-run tendency toward rising wage or earnings inequality, see Martin Dooley and Peter Gottschalk, "The Increasing Proportion of Men with Low Earnings in the United States," Demography, February 1985; Sheldon Danziger and Peter Gottschalk, "How Have Families with Children been Faring?" U.S. Congressional Joint Economic Committee, November 1985; and Lester Thurow, "A General Tendency Toward Inequality," American Economic Review/Proceedings, May 1986.

[7] In this paper, we are only concerned with the distribution of income among individual workers. There is a rich literature on other distributional indicators, such as changing differences in average wages among industries or among occupations. For examples of the former, see Linda Bell and Richard Freeman, "The Rising Dispersion in Industrial Wages in the U.S.: Efficient vs. Inefficient Wage Flexibility", National Bureau of Economic Research, Cambridge, Ma., September 1985, mss.; and Organization for Economic Cooperation and Development, Employment Outlook (Paris: OECD, September 1985), ch. 5. The most well-known example of the latter is Neil Rosenthal, "The Shrinking Middle Class: Myth or Reality?", Monthly Labor Review, March 1985. Bell and Freeman and the OECD researchers report sharply increasing interindustry wage inequality in the U.S. during the 1970s. Rosenthal's study implies declining interoccupational wage inequality between 1973 and 1982.

Nor do we treat family income in the present paper. But see Bennett Harrison and Barry Bluestone, The Great U-Turn: Rising Inequality, Low Wages, and the Shattered American Dream (N.Y.: Basic Books, in preparation). The most recent of many published empirical studies to demonstrate rising family income inequality over time (and, in this case, a tendency toward polarization as well) is by Katharine Bradbury, "The Shrinking Middle Class", New England Economic Review, September/October 1986.

[8] That hourly wage rates are certainly becoming increasingly unequally distributed among individual workers in the 1980s is confirmed in Tilly, et. al., op. cit.

[9] "Wage and salary income" is a subset of the Census category

"earnings". In the official Census and B.L.S. Data series, "earnings" includes not only wage and salary income, but also net income from entrepreneurial activity such as business proprietorships. The earliest definitive research on earnings per se is by Peter Henle; see his "Exploring the Distribution of Earned Income, Monthly Labor Review, December 1972; and Henle and Paul Ryscavage, "The Distribution of Earned Income Among Men and Women, 1958-77", Monthly Labor Review, April 1980. Because the net income (profits) reported by independent business-persons is measured so poorly (and may, at least to some extent, be rigged by small companies and proprietorships in accordance with the tax code), we have chosen to work exclusively with the variable "wage and salary income". The reader should note that even this variable is not an ideal measure of worker compensation in that the government makes no systematic attempt to capture non-wage benefits such as vacation pay or employer contributions to life or health insurance premiums in these numbers.

[10] The data used to make this estimate and all others are from the March Current Population Survey (CPS) Uniform File developed from official U.S. Census data by Professors Robert D. Mare of the University of Wisconsin and Christopher Winship of Northwestern University. The data set is discussed in greater detail in a subsequent section of this paper.

[11] The reader should once again recall that the data do not represent jobs per se, but rather the wage and salary income of each person in the sample over the course of the year prior to the March survey month. This includes overtime and pay from a sequence of jobs as well as "moonlighting" -- the holding of more than one job at the same time. Thus it is somewhat imprecise to describe any of the patterns that emerge from an analysis of the CPS as telling us anything about "job creation", the "number of low-wage jobs", etc. Strictly speaking, all we can infer is how many more (or fewer) people are working. It is almost impossible for researchers and writers in this field to prevent ourselves from occasionally slipping into the "job-creation" language, but the reader should be aware of the limitations in such usage.

[12] This hypothesis is at least partially confirmed by sensitivity tests on the subsample of persons who reported working year-round full-time. The results for this group were substantially robust across various beginning and end points, suggesting that changes in the density of the poles of the earnings distribution reflect more than cyclical swings in hours worked.

[13] See Paul Ryscavage, "Reconciling Divergent Trends in Real Income," Monthly Labor Review, Vol. 109, No. 7, July 1986, Table 2, p. 26.

[14] All estimates are weighted by the "supplementary person weights" provided on the Mare-Winship tapes.

[15] There is strong evidence for the former conjecture. According to BLS Employment and Earnings data, since 1979 the number of part-time workers has grown nearly twice as fast as full-time ones: 18.4 percent versus 9.9 percent. These part-time jobs contributed nearly 30 percent of the total job growth between 1979 and 1985. Computed from U.S. Bureau of Labor Statistics, Employment and Earnings (Washington, D.C.: Government Printing Office) January 1980 and January 1986, as reported in Industrial Union Department, The Polarization of America (Washington, D.C.: AFL-CIO, 1986), Table 3, p. 20.

[16] Bureau of Labor Statistics, Employment and Earnings, Vol. 33, No. 3, March 1986, pp. 79-81.

[17] Actually, the improvement in low-wage employment ratios is exclusively restricted to women versus men. Note the ratios of low-wage employment shares for the following groups:

	1973	1979	1984
Non-white men/ white men	1.36	1.36	1.40
White women/ white men	2.41	2.15	1.88
Non-white women/ white men	2.58	2.13	1.79

The largest relative improvement has been among non-white women followed by white women. For non-white men, the low wage share has actually increased relative to white men.

[18] For one such study, see Robert Z. Lawrence, "Sectoral Shifts and the Size of the Middle Class," The Brookings Review, Fall 1984.

[19] Frank S. Levy and Richard C. Michel, "The Economic Future of the Baby Boom", U.S. Congressional Joint Economic Committee, Washington, D.C., December 1985.

[20] Bennett Harrison, "The Economic Transformation of New England Since World War II", in Larry Sawers and William Tabb, eds., Sunbelt-Snowbelt (N.Y.: Oxford University Press, 1984).

[21] Our definition includes the following industries: electronic computing equipment; radio, t.v., and communications equipment; scientific and controlling instruments; optical and health equipment; photographic equipment; computer data processing services, commercial research,development, and testing labs;

engineering, architectural, and surveying services. The most notable -- and unfortunate -- exclusion from this list is electronic components. We leave it out simply because, on the CPS tapes, it is grouped together with other industries having sharply dissimilar labor processes (e.g. heavy electrical equipment, such as engines and turbines, which are typically manufactured in large plants under unionized labor). Since electronic components are well-known to pay low average wages and to include an especially large component of low-wage jobs, the exclusion of this sector biases the results shown in the text against the hypothesis of low-wage proliferation in high-tech. Richard Gordon and Linda Kimball, "High Technology, Employment, and the Challenges to Education", Silicon Valley Research Group, Working Paper No. 1, Santa Cruz, Cal., July 1985. That is, the findings we report understate the tendency toward low-wage job creation (and possibly polarization) in high tech.

[22] Tilly, et. al., op. cit.

[23] Ibid.

[24] See, for example, Bob Kuttner, "The Declining Middle," The Atlantic Monthly, July 1983; Thomas B. Edsall, "More than Ever, the Electorate is Polarized on Economic Lines," The Washington Post National Weekly Edition, January 6, 1986, p. 23.; Stephen J. Rose, Social Stratification in the U.S. (Baltimore: Social Graphics Co., 1983); and Lester Thurow, "The Disappearance of the Middle Class: It's Not Just Demographics," The New York Times, February 5, 1984, p. F3.

[25] Actually, the whole treatment of the category "class" in this literature is extremely ambiguous. From our perspective, class has to do with the sources of a person's income, not the level, and especially whether or not that income derives principally from working for wages. Surely the proportion of Americans whose livelihoods depend mainly on working for other people in order to pay their rent and raise their families has not declined since the early 1970s! Nor is there any reason to suspect that it will decline in the foreseeable future.

APPENDIX A

Northeast	North Central	South	West
Connecticut	Illinois	Alabama	Alaska
Maine	Indiana	Arkansas	Arizona
Massachusetts	Iowa	Delaware	California
New Hampshire	Kansas	District of Columbia	Colorado
New Jersey	Michigan	Florida	Hawaii
New York	Minnesota	Georgia	Idaho
Pennsylvania	Missouri	Kentucky	Montana
Rhode Island	Nebraska	Louisiana	Nevada
Vermont	North Dakota	Maryland	New Mexico
	Ohio	Mississippi	Oregon
	South Dakota	North Carolina	Utah
	Wisconsin	Oklahoma	Washington
		South Carolina	Wyoming
		Tennessee	
		Texas	
		Virginia	
		West Virginia	

APPENDIX B

WORKERS BY ANNUAL EARNINGS STRATUM (MILLIONS)

	1973	1979	1984
BELOW 50% OF 1973 MEDIAN	29.65	32.06	36.75
BELOW 75% OF THE 1973 MEDIAN	38.31	44.28	50.13
BELOW THE 1973 MEDIAN	46.60	53.13	63.04
ABOVE THE 1973 MEDIAN	46.60	52.22	50.39
BELOW 50% OF THE 1973 MEDIAN	29.65	32.06	36.75
BETWEEN 50% AND 75% OF 1973 MEDIAN	8.67	12.22	13.38
BETWEEN 75% AND 100% OF 1973 MEDIAN	8.29	8.85	12.91
ABOVE THE 1973 MEDIAN	46.60	52.22	50.39

INCREASES IN EACH EARNINGS STRATUM (MILLIONS)

	73-79	79-84
BELOW 50% OF 1973 MEDIAN	2.41	4.69
BELOW 75% OF THE 1973 MEDIAN	5.96	5.86
BELOW THE 1973 MEDIAN	6.53	9.92
ABOVE THE 1973 MEDIAN	5.62	-1.83
BELOW 50% OF THE 1973 MEDIAN	2.41	4.69
BETWEEN 50% AND 75% OF THE 1973 MEDIAN	3.55	1.16
BETWEEN 75% AND 100% OF THE 1973 MEDIAN	0.56	4.06
ABOVE THE 1973 MEDIAN	5.62	-1.83

PERCENTAGE OF NET JOB GROWTH BY EARNINGS STRATUM

	73-79	79-84
BELOW 50% OF 1973 MEDIAN	19.84%	58.08%
BELOW 75% OF THE 1973 MEDIAN	49.09%	72.48%
BELOW THE 1973 MEDIAN	53.73%	122.69%
ABOVE THE 1973 MEDIAN	46.27%	-22.69%
BELOW 50% OF THE 1973 MEDIAN	19.84%	58.08%
BETWEEN 50% AND 75% OF THE 1973 MEDIAN	29.24%	14.41%
BETWEEN 75% AND 100% OF THE 1973 MEDIAN	4.64%	50.21%
ABOVE THE 1973 MEDIAN	46.27%	-22.69%